

CLAIMS

1. Apparatus for separating silt from water which comprises a settling tank [1] having an inlet section [2], inlet means comprising an inlet conduit [3] leading to a pre-reaction vessel [4] which communicates at its base with a sump [21] in the inlet section of the settling tank [2], said inlet conduit [3] being valved [30], and the apparatus being equipped with dosing means [31] for the addition of flocculant to an inlet portion thereof, removal means [5] for removing settled material from the sump [21] and means [7] for sweeping settled material along the tank [1] from an outlet section [6] thereof towards such sump [21], and an outlet for the discharge of water over weir means [8].
2. Apparatus according to claim 1, wherein there is a said inlet conduit [3] and pre-reaction vessel [4] at each side of the settling tank [1].
3. Apparatus according to claim 1, wherein said dosing means [31] is arranged to add said flocculant to the or a said inlet conduit [3].
4. Apparatus according to claim 1, wherein the or a pre-reaction vessel [4] at at least one side of the settling tank [1] is in fluid flow communication with a secondary pre-reaction vessel [11] over weir means [12] located therebetween, the or each such secondary pre-reaction vessel [11] also being in communication at its base with the sump [21].
5. Apparatus according to claim 4, wherein the or at least one secondary pre-reaction vessel [11] is in fluid flow communication over weir means [13] with a secondary fluid discharge vessel [14].
6. Apparatus according to claim 4, wherein at least one said weir means [12, 13] bounding a said secondary pre-reaction vessel [11] is adjustable in height.

7. Apparatus according to claim 1, wherein the base [41, 111] of the or each pre-reaction vessel [4, 11] slopes downwardly towards the inlet section [2] of the settling tank.
8. Apparatus according to claim 1, wherein communication between
5 any said pre-reaction vessel and said settling tank is via a submerged throat [16].
9. Apparatus according to claim 1, wherein spraying means [17] is provided for spraying the interior of the or a said pre-reaction vessel [4, 11] for clearing accumulated silt.
- 10 10. Apparatus according to claim 9, wherein said spraying means [17] is provided with water from said settling tank.
11. Apparatus according to claim 1, wherein spraying means [18] is provided for spraying water onto said removal means [5] for clearing accumulated silt.
- 15 12. Apparatus according to claim 11, wherein said spraying means [18] is provided with water from said settling tank.
13. Apparatus according to claim 1, wherein said outlet section [6] is of part-circular cross-section, and the sweeping means comprises a helical sweeping blade [7], and means [71] for driving such blade in rotation
20 about its axis.
14. Apparatus according to claim 1, wherein said removal means comprises a bucket wheel [5].
15. Apparatus according to claim 14, wherein said bucket wheel [5] includes buckets [51] which comprise leakage paths [56-58] for the
25 preferential discharge of water and retention of settled material.

15

16. Apparatus according to claim 15, wherein any leakage ports [58] in a said bucket [51] are confined to an upper region of the bucket.
17. Apparatus according to claim 16, wherein any leakage ports in a said bucket are confined to an upper third of the bucket.
- 5 18. Apparatus according to claims 14, wherein the radially outer face [54] of each bucket is provided with side flanges [55] so as together to define a discharge path for the contents of a next successive bucket.
19. Apparatus according to claim 18, wherein at least one such side flange [55] is perforated [56] for the preferential discharge of water and
10 retention of settled material.
20. Apparatus according to claim 19, wherein one or more run-off strips [57] is or are provided in a said radially outer bucket face for guiding liquid to such perforation(s) [56] in a said flange.
21. Apparatus according to claim 1, wherein a sleeve [32] is provided
15 in a said pre-reaction vessel which surrounds said inlet conduit [3] at its outlet end and, with said inlet conduit, defines an annular fluid flow passage [34].
22. Apparatus according to claim 21, wherein said sleeve [32] is adjustable in height to vary its projection beyond the outlet end [33] of the
20 inlet conduit.
23. Sand or gravel washing apparatus comprising a washing tank, means for supplying said washing tank with sand or gravel and washing water, removal means for removing settled sand or gravel from an inlet section of the tank and means for sweeping settled sand or gravel along
25 the tank from an outlet section thereof towards such inlet section, and an outlet arranged to discharge silt and water to a settling apparatus

according to claim 1.

24. A method of washing sand or gravel comprising supplying the sand or gravel and washing water to a washing tank, allowing washed sand or gravel to settle and removing it from an inlet section of the tank, sweeping settled sand or gravel along the tank from an outlet section thereof to the inlet section for removal, passing used, silt-containing water from the washing tank to an inlet section [2] of a settling tank [1] via an inlet conduit [3] leading to a pre-reaction vessel [4] which communicates at its base with the settling tank, dosing the silt/water mixture with a flocculant, removing settled material from the inlet section [2] of the tank, sweeping settled material along the tank from an outlet section [6] towards such inlet section and discharging substantially silt-free water over an outlet weir [8].